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1952 Pacifix Ozean July 15 - 8 - 9 pm. Flying Reds at 8000', westward from San Francisco. - not they alreve cloudless. Flying over a continuous -20 blanket of all lying at the thousand feet. The same The rapper surface is level, but marked with low broad, north and south "swells" at wither regular intervals. 14/ The surface between is like the wood on a steel, terrellate in appearance with inequality on the curved arrangement to the blocks or thefter of along C 11 that are months proched Engellier & gove their officerence. the swells are more visible at a visitaria than divotly beneath, most striking of all you occasional amale holastin this surpase that have the appearance of votices or which pools. There seem to turn either to right n left with about equal Enquency.

July 16 - Michan, from air. Visibility through broken class. Lake toward south Rosly parts very banen. grass andoper and ridger dry. Frest in cyclicer and quelier and scattered trees, probably prosopis, on much of the glat country by the glat

like mative front seen.

July 10 gardner Rochs Toot amall rocks
surrounded by elifty
and one extremely duff
sea breaking on thom.
Cliffy black, upper
parts of roches quans
stained Summit of
larger roch appeared
covered with dry pais.
This not certain.

Crypton beterophyllor
Crypton dastylon
Crypton canadensis
Crimen producedatum
Hymenocallis americans
Pandavus tectorius
Itenotophum secundatum
Levesens glanes
amaranthey viridis:
Jinnia elegans
house fly
Layran albatross (young)

Harvarian Islands

1992

Trees, mainly Casmarina, have grown up so thick and tall that, from the air, the island has a wooded appearance. I have trees at least 50' tall and 18" a more through breast high: Terminalis large, Too.

1750 Water - Portente 1952 Whate & Pokale stop 7 July 20 - needs on west July 19 - at sea between Wale and Portrate. side in Stat, willy a slight littlethammion about 13 the way, saw my remember lagoon side. good growth of Proliting and a short greenish alga-4 sooty terns. seein from book. Museage, at smid-tide, ening) with a strong current running out but easily regotiated willy genningan troat. Leg very queet, mo traction or her side. tereral lange perposes in small whales playin and sporting a few bundled m. from aluf.

Polsah atol Polale alole July 20 - Sylvilla Islet, n. c. end. legelating a spans to rather dense Vial 152 - bollow layer scrub of messer Lepisma caught rinder sehmedig and scarols. back of dead messerschniling Chin varies from 1 m. to 4-5 mitall, When band to catch undawaged. low it is about Equally Caracitic fly flying. mixture with both another is top tayer confroments about the Top layer - i exchroacher same leight. Where from hand to the taller the merserdead soe hollow trung schmidig gums a of living messeschooling top story, with a dense second story of feaevola 1-2 m, tale. Vial 153 - skinh from there is an inequilar under back of dead lower story 1-2(8) don. messerschmidig. high of Lepture and Very scarce, & seen, all the Pertulary lutes, under barb of dead the latter more abundant Messerschmidig trees. the teptures only abundant in open place , the Portular Vial 154 - insects cauges indifferent, apparently around lights. to shade a sun. Bouldwing is also present, but Jan 16 - 3 large red hermit uncommon and an crabs. " small harmit int. unidentified grass is I string conglet in tent very treat. not - mangy blind (2) much of the area, is small not in mouse. especially toward the small bermit out with onter beach, is of branded legs (inshall) conglit bare noch, cobble size, hervit valid in boy from yest borden on tingisled but. Theyels a Polish compt. occasionally somewhat exosely covered with

brolf-dead promosa tulin winey. There, locally, are targled in the Intly interior is a longe sandy were. mostly ofen with scattered chambers wholes lefter is spay full of burgous of white-fraced strawety ? which burrer com in under fort. The brid; as beeding now, with eggs. They pretend to be chippled of lead me array from burnows. at night very large sed hershirt crabe come red. nome are to be seen during the day. They occupy Twilly shells. They may be seen in dozen migrating to the days on to work in the relater (parille)

Papers 1 - 7 00 mother
"2 - many minotopideptore
Sample 130 - large church
Felach searly - on outer

July 21 e. and drybills ")

7:05 a. m.

Broker cumulous clouds

not much weekend

Wet breeks we lay we c.

Mosterate easterly trays

Vial 155 - flying clinging alinging to deathing the transfer of money. Standard to the comments of the commission of the commission of the commission of the commission.

Viel 154 - Dermestid Laws

Sample 131 - large pebble of course white pumis -

Lample 132 - small gray puring petbles ground somewhat ground from layour beady about in middle of island.

Paper # 3 - fittering on boulder ridge, ruter Beach

July 21 - the hybrilly Polet lagrown beach slight lagrown well by sold and mobile library by broad expense of later about center of sidet is a stretch of sidet and a few fielders, willed might tide about to yard wide, with about to yard wide, with about to yard wide, with about to yard wide, mild, about to yard wide, with a bout to yard wide.

Sufficient vising.

to a sandy idy the new of the short distance of the a short distance of the stance of

July 11 - pytielly tolet. seaward beach. at least northern in is bashed by a tremendous boulder ridge, mgs to 19 high several brander sparedisciple, flat on to both thing tack from high part to sand, 12 Plats Boach mostly steep. of pebbles, cobbles in Frilder, varying brett a sand. Three low stacks on the need flat with perched large boulders, somewhat hinderent union of boulder with predestal clean. Tops of predestate on level with beds of old reef, anglormet that protride from under blacker toward there, Obviously boulder costrep on a previous begin neel surface

1752 Poleals stock 16 July & I Brage Islet Viet 157 - our sanoplages 34503 Berhavia diffusal glant reddish, prostrate, common on broken enel in openings. appentional Fiel. 09 feptures regions (Fortie B. Ch.) " on grand flat above Lorgoon beach. Vegetation near lagron on month west error is a sembol feavola, return sparse, with scattery trees of messenschamplin In it forming a troken topating. at topof beach on placer a mariow and of pres heavola tostes places scattered Leptron Inland the semb is from Thorsesethmidea, wery speare, 2-9 m. Tall will, gradient trees 5-6 mitall. Pateler of Postulaca, some Boe haven and more Horagea testa, they or from some where there in own accommission of mand Lefterius is redded.

211 1952 Pohah atog

July 22 Kamomo Islet.

rather met grant gardent an open very low serve of hidge plant bray dead, but north vignously flowers branches, With the is Lepterness and Borchers in considerable abundany. nearthy beach fortulary is abundant and y peculiar very coars form of Reptrinus, dis is quite distinct from the common slevides marry leafed from The leaves are thicken and much larger stiffer, culmi lange sprikes langer. Jathe open grany - shoop area are scatteled menterechnished trees or buston, worth, in from condition. around the sand reentranty Portulaca is in there shand. onthe worth part of the picturely on the legger side, is almost continue lide scrub, always =6 partly dead Durly is

on the mostly end is a pebble - coloble ridge. with Hongitudelin radge ontog of the sith of course material along they is share andle Wherenschmilig ment inside it, tang that almost dead Messesseridia! I mly my hearwalk truly seen on morth west come Outer grant, near outer beach, is span Wherserselimidia send freet. along lagran breach at month and in a low people ridge. Heisten a now of small menerselimites Anos treas frakismin chump and lettle on no quand organ godent on ground. Very locally a little front, Tree trunky somewhat great stained 1 for open, on rock flats and ander restrict tres in busher are great stained fratcher or as much as a son, accumulated, but and general occumulation

Mobrale atolo

July 32 - I slet morty
of Kamong - from Lot.

Sprans shesseasinis
with some Leave of the
more spoint.

Somewhat more regetetes

Uran North Islet.

July 12 - month Talet around edge a thin by Ctrif musicischmidin with Portular Regitures and Boarhavia. I tris is mainly a Evuldes - ridge, except along +. midely and no de corner Inland is a sparse tow scrub of kill with much fefitures (ordinary) and much Brecharia. Court Eghtung only sen neer dagoon brack. Interior of small quever with foodlar. a few traff lead small Messerilimidis sutter in interior Conte and of islex a ridge with strang Messerclimidia forey. Love Portulary growing

on coral graves, forming

Vial 159 demonstide mades

Visal 100 - Pob waren

Vial 141 - Langely haging attracted to produce time and attracted for front in a content of grand in a content

prostrate from and a from lange tuberous white beneath from the prints in meeting the same about the short of the same and the state of the same and the state of the same and the same and

BEER Fitherham dim Track plate on shell and total plate back and total plate back

thingled charge of the wo

July in Libylla 1. 1015 8 James Electrony gently tradered levery they will it west rust

fiely 25 Libylla 1.
7000 or m. light alto Luter cines
gentle = rade wind freeze.
depte 7.6 met 25:80.

12:15 pero, chear merhad, annualus des 31:19 pero chear merhad annualus de all live des des 31:19 met 38:8°C

The property of the party of th

July 27 -5.15 p. m. somewhat hage der ball 323 wet 24.86 milled 323 wet 24.86 -why 23 - Kommer / slet Onter third is been afrance Messenchmidia soul a los front, The trees 5 - 10 m. afect. 3-1 414 Inthe opening some half dead dida both species of regitures, much to verlieble. Thing frost is on court union gravel, this for many is my broad very low willy granalled to seam and ridge, well intend. a local sorty term northers inthis frest ground searcely showing any quanostain. boil sauple. Sample # 135 from lage whost 19" deels - love gray- from sand, maging on surface of ground. Rubble beneath. Well out into the open part of the islet, in the Side sout a small ofen place is occupied by another sorty term working. no others gyand status on surface of growth temple 124 from their, lager 10" deep of loose gray- trown rand. Butte beneath.

also in offen part of north and of inland soil rample taken from shearwater roster, Lample 137 - layer about 10" deeping loon grey-drown send. unda this webble Little evien of great on our grace. Lample 138 - propile in quany deposit unde Small Mercerchinida Tree in open lide soul Fryn 1 - 100 12-1" thick, gray, fring, somewhat greatery get 5.5-6. Rayer 2 to ched latery culme, gray-tion, romewhat greany, gett 7 tample 138-21 Lager 3 - loose graybrown sand pHS about 6 thick to notbe. Fample 138-3 Franklik 139 - middless troubly ridge of squall gravel - aparte - Missen Don't Layer 1 16 shellers by meeting longh 1 194 material 15-13 =

Vial 143 - lizard from dead mentioned

Paper #4 - Littering from huge bywelders on amage islet between hibyles and hit.

fample 1/12 - drift seeds from all beaches. (add also 5 correnuts - orme showing a seed selected also the selected also the selected all time on set atolf.

Lample 143 - Previous from surface of Polish 9.

34523 July 24 - Portrato Volet

July 24 - Portrato Volet

Leving and resignation

in nothin drift long in

entering of islet

to by James of putercens (1918) Known

to by James of sidge along

lagson beach, derminant!

Vial 164 - Pokads Islat.

tange webroach from much by.

Only weaver from heaverlacewith.

Lonall cockrowach and rev

whing miles from bace

of Refetrence clarents.

Centre recoming were black;

sticles, store, etc.

hepisama, provide and east

presence from and east

presence from and of lives

of difference.

tall places and fruit

Lample 144 - soil sample from heaver and, 100 m. from lagron beach layer 13" + thich - love sand with roots, very slightly darkered at sufface, otherwise light how.

Sample 145 - soil profile from well 1300 m. from center of the of the state of t schmidg semb wit sparse Leptrus repens Portulasa and a littly lida. Fager 1 - 0-10" love hour sand talketies comewhat at surface. (Surfrace of small gravel streng with boulders). Lample 145-1 Layer 2 - 10 - 14" very hale very fine road, compact friable, inthe some conal gragments hample 145-2

Layer 3 - 14-23 - graybetwee fine mobile Lample 145-3 Layer - 4 - 23 - 33" gray from course unably Lample 145-4 Layer 5 - 33 - 49" light pinkish rather fire with with the fragments. Laufer 15-5 Fayer 50 6 - 49"-65+ semi-inducated subble interstice filled with very fine material whitish: Water in this langer: 145-6. Water sample no. TF-2. Vial 165 - arimals from nost crowns of Laptures repres Vial 166 Rigard from on ground. Caterpillar from on ground. Cochracher, isoporto, prendoscopiers, etc. from winds stons. old on prepa-care from abandoned birds next. Viel 147 - legal from Microenselymides to my me and of island.

Sample 140 - Lord profile from well to way from # 145 to Lagorn in opin area, steriorte rootery with holes about 11-1.4 mi. apart, Portulaca dominant, with a little Side and very little Repture referen Layer 1 - white crust on buface 5-10 mm. thicks from diving when couled between fingers, but spraestly strengthing dy algal! sample 144-1 34505

hayer a fine compact when sand with short short when when when the standing up well when eight gray- from Lauflight

Larger y. 72-38" Loosel contraining fragments up to 6-9" didni and some layer Larger

Layer 4 - 18-587" (water 455")

firm white wet milite fine trust with
some large fragments,

Setween braganists in Water 77.5-8°C, p.H 9.2-85 Water 27.5-8°C, p.H 9.2-85 Water ample mo. FEB TF-3

This well 74 pases some some of 71 at Engineer somey backing of paces in from lagron beaching.

(There samples marked 166

Vial 168 - paper trom
well world, ment in
messenselimidia such.
works and egg cover, spile,
works, atc. I from in top of

1452 Policele alolf 41) July = 5 - Libylla Islet. men in a level. stanle plants, with thick 3AF 20 Mornora Tuly (believer,) Dono actioned generally street trunks up to iden. thigh and 3dm. drigh, with in transfer repeatedly died back and sported at me, and of islet an exact treater below low tile les " - gom - 1 27 (Ser - fra serrulatatforsak) J. ag(de Toylor 1455) 7 -29 78 White I t mondy byttem 128 Michaelyen, okamarai Setah. (det Taylor 1800) in wal Industry. or foolithon on specially bottom, in slave Paper to - white to light (damaged)

46

Potrate atol 52 1952

Inditable aw, barrielly, For vegetation types on Potrails, each dominated Mya single species. Various combinations of their veen, as well as different aspects with regard to beight, density.

luguriane, etc. the type that give, the atoll its chance, Event of Horneyney hailes m. tall with war to sin trees that may be tacky It is rarely so demy walking. The may be

found almost my

substratum, tout is usually not in sand overly my protection foculty it has an understory of fenerals this often closed so as I make progress difficult without a machinete.

Ordinarily, where they in no bearing the space between the

they was be orregized by sprane left in lottles

a prominent bythe is a seriely 1-2 m. tall, of Leaverla Frenteria either purior with seather This is commonly so dense as to impede waltring through it. It is also of a characteric bright green or yellow green color. It generally It is the ground completely or broken and but by no means always. The low spreading branches, when covered by wind-blown sand, send out wats and from The other words type is a to usually low, this sent of sida ballar. This varies from sis to 2 m. Tell. and from rethe spary to so dense is to be unpleasant to wally real Totach because of the weak nature of the should. This may be a practically pure stand, but more

fremenicia seatters often it is accompanied by reptures, Portulars, a Boeshavis, or any amplination of there. This man grout either the same really on bother cres. an extensive aspect of it is on saidy stretches would in the legon side of the troader islets, recipies by northering of shearing with numbers burrows, Here the file is morally mined with our of more of the herbaceous species. This type grades imperceptably into a bunch- grave save with one or both species of ceptures. built more luxuriant aspects this is on sand and is absvorapile by shearwater burston. On then grand deposits an rock, or an recently available ment a probable habitate it is very afrance and compensed

56 1732 Arbuhator.

usually of very small tult to the free. this and the remaining type, of home your ity of Portulais lutes. are thand to define. Insandy places on the layour side, especially around neertrants and on rubble or even pure broken and, Certulain may exist in pure stand wayinto the Septement Tyle. On rocky places, or even some sandy mis it may have appreciable Boerhaving. It may. and fragmently does, form alignound borrer and minimum timedia firest. It usually is sparse, under any circum stances, and doles not completely cover the ground a prominent feature Troben coal unially the tops of boulder widger en boulder flats, commenty on the sound side or

58 1992 Pohak atol

drescurant growth of marious species of Covethon, 7 as singer of these relife is at about low tide level, around Theire edges is found in rem a few inshes, resemthing a miniature eithothamming ridge In holes in this platform tros species of canlang are abundant and reveral green algre much less so. Wilers dectyon forms conspicus teefts on the surface. the windward refor were not examined closely, another ingular Eithothamning nige isevident. l'atches of reef just inside the windward reefes are reported by C. G. Johnson) to be securially similar to those inside the leeward reep. an outstanding featur of all the land! negetation at the time of there observation was the appearance of Atomorphis distinction and lost all but termina

tupts of very asmall leaves, much less than half round size. Leavely had also lost its lower leave, but still pulsently almost normal sized leaves the lide butter with practically all at to partially dead, some completely so. The Kinning Illand every a fraction of their sunnel sign. Greehaving was generally purplied in well and back the leaves hory all but the most district frants of the branches. morning that died brack to short seandent bronches with short leafy side brandley, a stilling thing about this species her is its forming a short thick trunk, about a fort high, with short England lings stemme. were mostly gray-trong

trifts, with all sulma and most leaves dead. Only the crown and small shelters france were still alive. Costulary strawed less effect of the days than any other freak but eventhis wan obviously willed at the tips, and in many areas flowered an interesting fact in this connection, may that the effects of drought were the orbition in the most sandy area, sul antho leagon side I Karmonno Valet and the lagger idge of Volale The Moundationisis tree on word prants of the atold were frontly dead, not least had dead branches, Judging from the greans depolit. runder the trees, The dead limbs were the habitual working places of By borbies and frigate birds. Whether the limbs were dead from this cares, or

whether the birds chose the dand limber to sit on was not obvious. Because of the presale of dead fronts of trees the reactation had a very bedraggled applearance. This of course, was intimified bolfed by the general spareners of foliage on the trees and other plants, and the grafrom ela of the dry The Stag at this time, also presented a very undupuriant appearance. Practically all of the plants well partly dead, and the general aspect of the field sout war one of dead gray aticles.

62 1952 Potrate Stolf Poline atolf Islets. 1 month slet - our p. 23

with the

2 ment richt south - ser 11.23

3 Kangne Islet - see 70-22,30. The spanse outer bet of messer midia vais them half the width of the islet to less than any Comparison of 1945 and 1951 Whotos shows that the Cisonia from patches are gradually growing. Latin also that the relation 179.53 of side to grassy areas in the open pait is not a constant but a shifting one. The gray placer on the phroton are fida, the salt and pepper me parts are when shearwater burns are abundant, mostly gravey. Darle portion on scalloped coast, lagour side, is bare

work, underent by water.

side on in from gravel

in openings between

sandy patches in seaward

ridge, have much Cortulace

Messerschwidin trees. Low

also on boulder intege and bare note on s. As. commercially forthe lesserola hers.

64 1952 Polich atoly.

Birt of those seen.

Plack forter store.

Pelacle footed allocare

Pufficient of.

Frigate bring

Red tailed tropic bird

White tailed tropic bird

Brown booky

Red footed broky

Common modely

White capped nothing

Livey term

Telested term

Thing term

Policy term

Policy

Wandling tattles

Bristle-thighest curlent

Country

Rey herm

Bridley teny

acureny

Black footed cebatrons two sees flying on previous minite, name sees this time

Shearwater - extension northern on Sibytla, Perige, Karrone and Worth is lit, an sandy ground, when hote era Burney done is the sand, the notte often giving iven underfront, Il live their on too much mobile inthy sand the drewow are merely depression, someraled try a triff of grass being bent one the top. There are eggs and nearly grown young in various stages of feathering out, to demost Their brild could not be identified even when is hand, with either magning alexanderi broke They brain closest to the white based shownte. They are, overall, about 17 inder long, wings 17/2 repoper mandible 18", tames 112", middle tre 26" teil ".

The engine freshauself deale orbity hours. The frestly of The back with paler lolger making transfer lighten trandi; in front of and telow gree and to love of bildslater grans Silled State Porter to be will be belly white a slightly wordled with gray, they -work at lines forthing a light band news ! treet and as sedon of belly; wings worty, about, primaries and secondarie alow, under wing enerts (1) will my brack of feather light grantle ether welf white, Then top lest I under side white, which is again ditti tail dads obten by miles whom it early feet flesh prints. young birds when filling flathered, but not alte to gly, are entirely arrive from a beacherd closed and below even the freet .

One ling stays inthe ans. The others return of duch. When the brooking bing in silvey fulled a frighten from he ment the ega in officer charges Between the free dry get ever when the bind is out . It has white, Whath big is frightened from he next the flitters across the governe, fretending to De originals there birds and seen award the reland, most for at see, in small plother a singly. The boundary are constines as thick an one meter about.

Red-tailed tropic lond -These may be seen fairly commonly flying over all of the islets and week found incubating eggs in small number on all except footstately the islets west of hilylla afew almost grown young were seen, also. These thave black and white barred feathers on wings and back similes To a baland with christy and black bills. There tresnessed in the adulta. here linds are extremely to tenacious at quarding their eggs. They serien at another who approaches but will not leave their eggs, even when their red effiche-like tail feathers are rudely fulled out. as with smost of these sea-bends, they will wite vignously when motested

White tailed tropic bird and one of these was a seaward side of Libylla Julet.

Red-fooled books, - The seems to be the commonat booky, at least in land during the day time. They shay be found. scattered working in the trees mall parts of the island when their occur, but me less common on Policale Islet than elsowhere Dering the day they are seen much more often setting in the trees than flying, so it is probable that thely do their fishing at night. Judging from the greans accommitation, each bird must have a particular branch that is his favorite rosting place. They do not seem to be gregarious in the sent That they angregate in groups. They may be approached closely, only attempting to fly when actually moresty or transcrimes, which a person is within a very few feet. One when disturbed, dingrayed half a dozen gain sized squid. a very few young birds were near, and one bird incubating an egg in a next in a tree.

Brown Bootry - although The the think the state of the the opposite from those of the red fronted brooky, During the day the majority were seen flying, especially ever the received beholds and reefs. When sitting they were practically altrays on the grown or on noteles, especially along the seaward side, of the eslets. They were not seen resting and little - enformation man gained as their habits. They we expandly favorite victims of the pirary of the frigate winds.

Blue-faced bootry this is apparently the least common of the trybies of Polich Italy. they are to be found, singly or in frais, or in redsimely, almost anywhere with any of the islets except for its Islet, always sitting on the ground or flying They apprently flish, at least part of the time, during the day, as one was observed borning and freed her young in the early drening teges endry no meiting birds were seen, but almost full-you young were not vere. again it was difficult to form an idea of brown many of these brids where present, as their habits werent to well-known.

Dridled (. spectacled) term -This bird was only seen north islet, they were gray about north a black coun a white ning, under the evour, and with a find tail. they plack feet and made baroli wine when They were, with some difficulty, flusted from their resting place on the ground in the enterin of this borner welry jett. They circled around protesting workers, at the intrusion.

Crested tern - 21 any time of the day from and to half do you of these could be heard anywhere, along the lagorn behilves of any of the rolets, patrolling the shallow water hising rechlessly for aniellfish. Their disagreently for aniellfish.

Common modely -Modelies are common but by no means about generally on all the write. Their whate were observed most commonly on Kennine icelet, when they I were generally scattered, in the ground, with eggs at this major. The tellult tinds, here, were of a lighter from color above than seen elsewhere. He When sitting on their meste they drould permit a person to approach to within about 40 feet before flying, then they circled about, screening at the me anyone examining the mester. There were, as usual, articly accumus lations of twigs, the birdy, here as cleanly, had tend to sit in groupes on sand for and with feets expreed in the lagor, apparently doing nothing But enjoying the bunned each others company.

White capped norder this bird is been common modely on Poliste. It is to be seen or easimally, friendly in the larger and proups of next are falled in the branche of the Risoning trees in the grows on Ramone Islat. It was not observed if there were eggs it this season or most.

Tany tern- This most charming and broutiful of ser bilds, is to be seen at any time on any of the islets from the dagon, Foresthe menty orlan. During the hottest part of the day they tend to next on the brancher of trees or less often. anthogramed or on rischer. They have in a suram ever anyone walking through the words of drush, wenturing to almost within arms

ready Their eggs are found, occasionally, almost anywhere in Messeschriding tren. and very abundantly on Pisonia in the grove on Kamme but, in the usual fantastic manner balanced. any highted limb, on a forte of a time break - in a slight defening anywhere Day was ton an a large foulder on douth theet. The eggs on Solaal at bank about the arme range of color variation as been etsewhere in the mothern marshalls, but here the smaller end is much less pointed than seen elsewhere. Du fact. it iralmost the rame strape as the larger end. The birds as induced to bean their eggs willy with some of history Thomas they plaintily back across from them when leaving is pleasant to water, also Their careful east appropriating and settling down on the egg

seem to have a more bush of the bill than there seem elsewhere.

12 lue - gray fain ternlet -This delitate little bis. not seen elsewhere lucing this survey, is smaller! than the fairy term, and of exactly the alive - gray shade of the boulder and cobble hidges and flats so characteristic of Cotract landscapes. Small number of there Dines are to be seen almost anywhere. Their curiosity is as well developed a is that of the fairy ten and they seem even less agraid ! On the more wooded islets, askibyth Briefe, Potrate, they seem to prefer the costs seaward

side The though by no means, staying there only . Possibly the greater prevalence of blue - gray slong ridge and flats on the outer sides is the reason for this. On north belet and Kamorne They are much more abrundant and more presistently aurory than elsewhere, and me can go nowhere on these islets without or constant accompanion of their Whirm, whim although their behavior suggested that they might be sesting in aggs or going were seen! and third was flusted from a small empty rest, merely a slight accumulation of green stems and feather in a slight depression whethered by two mostro on the boulder ridge on the seaward beach of Buyo. This was probably one of their nests, and their color would suggest this author normal ballitat. It may be moted that, a dull narge, within then canany yellow.

It was sufficient propulation and the surveyor to show that

1952 Potrale RELY

golden Plove -Then are seen now and then, one to three say a time, in my open strace. They are mainly in the salu plumage he in the minte snottled golden and slack above, white below time individuals weever, hovever, thus at me time (0, 9, Johnson), in The hardsome shring plumage, dark from beneath with promine of white exchouse and white lent along the sides below the wings.

Wandsing tattler These waste nather county
seen in pracage and
montes seef flats i would
which subspecies could
not be dethining, though
both may be present, as
me bind seen was
noticeably a malle than
the other. as many as
four evere seen at one

Turnstone a few of these were
seen along the seaword
beaches, warmally in
two or three, sometime
in association with
tattless and places

Bristle-thighed carlen Corland were seen
more commonly than
many of the more
southern jelands. They
your mostly on hibyfly
Variably they were associated

in small groups of two 5 five buds. One sharing at 7 arm. a plock of fifteen flew wer carry in kilylla Islet out a rather low altitury. They are generally very tame. Out pair, on home, fished around on the beach a within ten feet of where I was sitting. another group of fine spent half and how aimlessly wandering around within 41-51 feet of when of we enting lunch, also on Kamorhe. They did not seem to be esting anything. one was penting, with its bill somewhat open and greening. The day was very list!

Reef herons.
These were seen organisally in various situations—
lagon and searcher, paleage and searcher, paleage and searcher, one inland and reefs, one inland and of the atold.

White IIII
Mottled III
Darle IIII

by their burning, bring short less aftered moderning to the surface. Their effect commonly to es not go more than two feet down, usually loss. The surfex is very liveren and has numbrous light what patches. Willing we this is difficult because The burnows frequently collaps under a person weight, There gray-Another from will can probably be classified with the Chiorya series, There are local genous patches of a few square the under trees where finde babitrally word. It is not known if any of this soil is siggificantly phosphatezy. the number of bids poperlating it would regget that thee might be a significant lineament of phosphate. my comentatim was noticed. Under the Risonia goods a very slight frest develop ment was noticed.

another type of seelstratum is widesfront in Robalt - though -it would search, be considered a soil. This is loose broten coal from petitole to Evoulder size. This vecus is ridges and flats. often completely Do Injustation the report bluer gray color by alger growing in the linguing surface. On fouthlest a ridge of this character is white, because of the instability on This islet due to conte of wind and over esting. There was certain ander, also, of love with surface unever but with soil only by theries and comition. This is also blue-grayor blacking gray. Most areas of this thing we marginal to the islets and writingstated, but some and on the islet, proper, and eved by simb.

1942 Pokak atall

The first several

days spent on the atall

rocke brot and dry; b

le seen, but smally b

there roces a few lacatter

showers, not enough

to most than morntentlo

surface of the ground.

88

There were no week. The only animals that by whom were the nat and the skink. Kattus exulans was bainly common. Half a lozen were seen at about sundown while walking along base-line trail cut in seul. quite, number were attracted a camp, and came out at duck and afterward & frage, in garbage pris and around camps. The elsiness were fairly ammon, but not so which so as on other islands in the northern markets, they were also small, waterly.

5 Libylla Islet - The vegetation of This elongate islet is generally arranged in longitudinal belts of varying width. along the tagon books there is usually a low sand ridge, not ordinarily more than a fort or two bright, was with spane partially dead Messerschmidit some hear old in the themander several places it change to a high ridge of assorted material - pebbles, cobbles and a few broulders, about 9 above hightede levelin the lagion and about 4.5° above

level of sand in interior lat lowest place this sand is only 2.3' about h.t. but average seems to be along 451 The rilly has messeractividia with Pertulus and breihaving little grass. There are several statistic of such ridge along the

lagoon side, especially toward the some and. to from the generally the Thesessermidia along the lagron show presents a rather bedraggled appearing, with many dead limbs, The is probably due to birds rovating on the In from the lagorn shore is a belt of sand flats with spanse dida soul, Legetumo, Portulaca. a little Boerhavis, and scattered trees returnly of Messerchmidia. this area is a wast series of Aleannates rookevier, the ground honeycombed with their furious and the footing insecure breams the burne care in when stepped on. This area, where sampled had a larger of very fine gray then sand on the surpace up to 2' deep. On the acrial photos ix presents a salt a pepper appearand because of white send

94

of the burnows. The density of the kinds seel and the proportion of grass varies wally. next belt toward the sea is one of a sparse ecrel frest of messerschmidy. Focally they is an understory of fearola selout 11.5 - 2m. high. the main frest is 3-5 m. trigly, individual trees higher the ground is variably evered, though always meny sparsely by pronoca tuba Portulaca Lida, and textures. replaced by large were of dense dearvolasons with a without scattered Messerschmidia and with no lower layers. This is so dense that it cannot be walked through frang distance withbut a machete. The bell Outside the Messersilvaridia or fractora. is adinarily or rebble but this varies to sand

or holien coral well along most of the outer beach, directly on the beach and arrivally in elongate areas within the scrib forest, in bas broken and in wolden boulder size, in ridge and flats. It is shereder. istically of a stus-gray cotor, dute to mirrow fix algarianthe outer layend The white timestor. "It may support no manosispis vegetation stall or ecattered Messeradunidia scattered promoca tuba with distal prests lead, or very locally, Portulary and Botheria; on sand accumulations, replums. anthe southwest along the still seaward beach become sandy, and a said and gravel flat extends diagonally along the passage, probably regressiting a filling ind pato the fractage. It is being covered gradually, by small messendentidia bushes.

the passage s.w. of fibylla was dry when examined except to a solty whether a sold between ocean and lagoon. This passage probably only carries water and lay and they carries water and beight tides

on the 1745 photon they were many transverse trails or sulveyor graze lines visible. There are not at all evident not the 1981 photos, morarly they be located on the growns.

The passage has evidently filled in very much since 1945 and regetation on the southwest end has become more absendant.

Libylla-sejublar was should be sevel edges. Thuch then arrend edges. Thuch many developed them in 1715.

7 next islet. -More or less covered by Messerschmidia rather sparse, especially belt not franking down to include most of The passage barches and the whole 1.-14. and forme fearvola inthis but spans. I dense pately of france south in conter. Leaerola on two ends of lagon beach, not in By Brohen cord indge along outer side, with Messerchmilia, spore, along lagron beach a gravel ridge fading but southwesterand, aravel and sandy flats on passages and reaway side being to tonized mostly by messa. schmidig.

Shaped grave feet

98 1952 Potrale atoll

next islet - along most of lagor show a low but altruft colle ridge, interrupted to westward by a stetch of sand. Interin frately - sand with mostly side and grave, Messerichmidia with or without understong Leauvola in flam sandy they of hearvola, a hereote along serword side, especially toward n. s. end, a broad boulderse wolgs a boulder grand flat Veryspans mengerallimidio sento and works amaller roestward. West end a gravel flat, with cobbles, where vegetation yadually things to scattered hosevols and messercelimidia busher with abundant small Leptreus trefts then it from then out to an extension ban gravel flat just being colonized by both Trunds of Extremo Cangeone

forme distance west of the point which sticks into lugion the Acazonla rapidly drops out and the south is pres messerselvinidia of Leptum. Then ting tufts the west and, when the sand oridge gets lower Leaerolla reappears, with some Menerachmidia, and centiments when the ridge gives way of recently colonized mostly by Meederselimidia buston. buthe middle of the rislet, beautin soul has grown - reg thickly anound the Japanese installation Welgineral beight of the seculo becais y-4m. but it bucomes lover seaward, or the grains gets rocking. Messe. estimidia trees wetter infeatured, 25 m tille The thicket is continuers. The securard so my, on a gravel- sobble ridge, is

The bases of the Ledersh brises by sand brushed brushed brushed brushed

- 11 Poble Islet no regetation whatever - a sand a
- 12 (Extentile 8. / fontly 9.) see

aug. 2 - Elege Islet. Practically mo signs of effects of last winters direight on the regulation. Vial 174 - chypomelists Teste waster from It those. all of the other insects from bag of california inco steled in ITC warehouse on pier. all the California nice said to be infested, more of briental ving. Limit bown beetles i most numer men) also noticed in flow flow. a noth laws also freunt in abundance, spinning web turnels including in attil spiders from walls of warehouse. Musea from Enelaphan Islet 71. ang - Kwajalin Islet Hibranes tiliacous L. at top of beach, disturbed area. 10 aug 3 - Kursigalein Letter atolf Spline shoth, attracted to lights of sensel archief

in lagon.

any or - humpalein halt.

I sland vary green now.

Unly signs of throught are dead wisted halfshory

cocount leaflate.

Cosomet trees transplanted least winter, worts drastically cut back, in day season.

are all growing. Measurements

did not survive.

Vial 175 - insects and spides of collected from beacrola of Hibriners tiliaceus londer barres of there not algorificantly different carbinach, questyffen, and attid from ground. Flies from tips of Pandanas leaves. all from western and of Knajalus from tips of the western and of Knajalus from the western and of Knajalus

sterile bush I me tall.

aug. 3 - Enelaphan Islet The south and of their islet is thickly worded. The central part is in extmut plantation except forthe strip cleaved across it when the radio towers are locately The ment is in semb firest and semb. The react extremity of the saster worded pat is of Pemphis luge trees, forming a closed canopy about lower tranches dead presistent, even small twigs, covered with Tradtepolier, little a The the charge of the the benett. to a mixture of quettarda Pisonia, achiosing and Pamphis in which the Periphis gradually drops out, except along the beach and Ochrosia becomes abundant, in places forming parches of free Chirain stand. Everywhen woder the debrosin is a solid stand of its stedling. On the seaward side

Inthis miner front Wedling of long are tangled my

In the cornect planteting a deep mat of Widelia, in I fromountubalisant I firmen fres- cappae, Journa The of grand ground couls. Their relative abundance varie Evently: 63 Isit chavel or some combination of parton that letermine relating abundance?). On place where this has been removed a tramfled out, Septunistant + Thinks form a thin ground every or with various riverds. around the radio Towers the ever may have been burned deriding dry staces. now locally thin mots of Wedeling and grangateles On the west and the soul frest, 4-5 may, is dominated by featools, mixed raisonely with gretlarda and mersershinidis, tengled locally with consulty.

In spen spots an ileases and spetumen of the second order to the second order to the soul the soul of the limited of tall beauth of the beauth of the top of the beauth or the sound of the beauth of the contour of their edge is about the sound of their edge.

along the seamand side is and extensive flat to biles I would to biles I high title level. anthe action of beach work led. along the middle of the seamend side a said of the receptored with flat. I have along the middle of the of the seamend side a said of the receptored beach of the seamend with flat. I have along the said beach and the seamend with the seamend with the seamend side of the receptored beach of the seamend with the seamend side of the seamend sid

The bearing menty to diain

Consessed flots

I sadi f this phanes

Lample 15 22- seed girchest wife on bearling from Potantes and Kurayalern (Change State)

ang. Ig - Bikan Islet

Vial 176 - missellaneous
insects - Tettigonis caryler
flying in strub at
e. end. attid on vay
gravel in scrub at e. end
spider web.
larger wash flying m
open gravel black.
small anto in Pandanus
axile (que have).

small spirity - tender and. Laway - in sill, tubes a in nort crown of Portulacy blackish when alive.

Vial 177 miscellaneous animals taught associated with heavenotes frutessen.

Vial 179 - Ontower and and with young in leaf.

Vial 179 - flies careatte north boles made tog next - boles made tog crabs? or governg tautles emerging. Broken shalls within.

Falet is principally alonge grove of Pisoning trees, summered almost completely by a sparse belt of morsesschmidia, locally mind with henevola! along the south front of the shallow indentation In the north west side the muse schmiding and Leaerola are practically absent fouthward along the west side it is narrow and the sand ridge is freshy steep. at the edge of the Pironia Breithavis is common. Triumfetts but withing and notably chrotic Reptension of at the south and the Thereselvinidia bolt a windly in places dense enough to be called sould frust. Portulacy common in Therings and woloning beach, also deptimes. End side Misserachmilia and heavold belt narrow sporse with some hipturinand yellowing

Triumfetta un openings. at north end an extensive flat of grand with scattered rounds bushes of Leaverla merry christis and tiny tuft of Reptums. a few readlings of Kearry, To the mortheast of the (isonia, east of the boroug grove, is an area where Leptienes is quite common Just at the shorth and of the Pismig is a small patch of coconerts with a few trees of Pandanus. at this time the muts are stunted and affected by some trouble that causes as orging of grow where the green stuts touch early other. Old mut on the ground are normal as it do probably the result of the servery dry season just past. In open sand the runface is just slightly grayish and when distincted, at least when damp from a strower, it is faintly greenist.

The rutstanding feature of the marginal area of this at isley is the disturbance by tentles digging troves 5 eary their egys. O'm ang. & 596 trache were counted. That night at least six my tutles came astrone, of which I were seen by the party. One was meaned, being 50 long, now to tail, and 5 8" wide at widet part. IT was able to move an land with a small man on its back. When released it headed back to sea, climbing over very rough gitter well remnants, with some difficulty, but surrengully. When caught it actually shed tears. Thur, in probably three nights, they were over 300 turtles that came ashore. The sandy areas outside of and expecially in the Messerschmidig belt are thickly spotted with shallow pits

2-3 across, with a low mound of sand at me side which some the eggs. This is an infratant fractor in mixing the soil. at least tres of They next, were observed to have boten in they small flies buzzing in numbers about Tem (Viel 179), and, in one case hermit ender inthy holes. There was a broken thell in the Bottom of one of the holes. The crales may have made were probably from young turtle emerging a frew frally trutte were seen at night the seg. (for 18. They were being attachely by large red herming chald and by mas. The hermit cialis bite through the carepas. The nate through the plastron. see Jr. 149. +146.

any a bolom tolet Jan 18 - 4 red Germit crabe (min stell entiry the boby textee that is charried at side. Purple hermit crate in arreal surbs shell we 5' who comment trunks. Amall gray land crab in small Messerschmide and sine al land my short crebs about ht. on said. 4 baly tentles - me pergect on chawed on sides by bermit all other cherred on stormal, ty nate love taken from not not not caught.) The animaly in this jan, except thatener leany treamit nates not in shells, were taken at night in bright morninght.

Levenit chalos are The tour portion of truly the trus their status is the trus their status shells inhabited is than in Petran. It have end though truly shells. To in rough truly shells. I in tuly shells to want to the of in the print of shells.

Rate very common to survey seen at about

Jan 19 - small themit that be could from under the to bones and a few convoling about twe in mouse shall and one similes out of shell were climbing messarchwide the Crinoid mapped in hand-bending from around was head on rech flat (C9 poliner).

2 rate from around camps.

4 rate from around camps.

1 short crab alment latet.

9 leach roots in passage

between almen + Jalitelia /all

aug. 7 Petres Erlot

Vial 180 - lawar from messenselimides Ties,

HORATEN

Vial 131 - Odontomaslave
from forming trunder, live and
dead, precurging a free
from fallon Lead to
from fallon Lead to
from fallon Lead to
from trunder
from tru

Papera 8-15 moths anglit flying around Lealer ola a hight numbershaidin in bight surlight. Center of Pisonia forest

Lample sic - Profile of well
furface duff of twigs

and dried ledves,

staired somewhat

with quant.

Layer 2 - very danks

Lovery tota 9H 4.5-2, 5-3, 5.5-1, 6-6

Layer 2 - total crown

coment "hardfran" "

Layer 3 - gray - horry send

lovery tribely and inequility

ledded streaths stained

danks brown 6" sample 15:-3

Lager 4 - danker gray-trom

eard, loose, filled with

worts, restlered in equilar

ensolidated layers of

from about hours matrix

from atoin an surface

of sand and in also the

cornerting material 7'

dample 151-4

Layer 5 - Pale gray long son

Sayers in this . Langle 186. E Sayers in this . Langle 186. E gray to hours lumbers earthy material inequilarly prompted inequilarly prompted parties comented with parties comented with tall from comented with

Layer 7 - prohist acting my soling compared sand; gradually changing to small pale 11007

lange temper 156-66

Below this is a 4 fort series of think bed of and and shall grand, the complete stand of thinks the compact of thinks it work. Under this is a flat work. Ander this is a flat work. Ander this is a flat work.

The grave layers as stained somewhat he bound to more but the work but were server about 12 above sees,

aug 9 - Billia Tilet

14 stem Brist trade wind.
Wet bull 27° dry 30° E.

hazy tound horgen of and boll said dry 180 C.

10:10 p.m. large cummen.

half covering stry
alto stratus traditionly
elight trade wind breeze
wet bulk 14.8° day 27.8° C

Oling 9. 2 kmp 950 from large currelus close orce hat of sky, Eight tode was bruge wet bull 20° day 27.5°C

ang. 10 sand 6:35 a.m. scattered small commules clouds. light 3 moderate trade with here wet bull 25.8° dry 24.8° E.

give nom. A scattered comming clouds. light trads and trees.

aug. 10.
11:20 am. grantly overcant
by scattlened cumully light begge
west bull 27° day 27°C

Chendin prychometer 6th,
bulls 85° F day)
after 4 minutes argination
with wet bull minutes
wet bulls 79° day 878° F

9:10 almost dead calm. settlessmall cumulous about toll 27.30 day 29°C

12:40 fr.m. almost dend calm. tight without annem. Bending stylen with a lotty Lay 90.5 F wet 79 May 90.5 F

Japanere paystrometer wet 28.8° dry 31° C

unconfortable.

950-55 a.m. extend fraint to brought the western when when the of a count tree west broth 18° day 29° E.

Sample 157 - Peat Francewhot.

Stained with grand metric

and consolidates metric

from beneath it, more

lag. This is from

lag. This is from

file islet.

emple 158 - Pent 3-4" thinks
of large Prisoning 158-1

4.5 - 2 3 1 2 5

gream stains 4 tests all pt 6

inch my longe friend from
the true what from below
by true water from below
by true water from below

from man center

Lample 140 - yellow picket of the bree, franches

34567 Portulaca Rutea Sit. mater in comment grove, mater and of inlet, rus.

- or Co Pandanus tectoreus Pash. in coconnet grove at edge of Pisonia forest.
- of Pisonia grander R.Br.
 in edge of Pisonia treatin frest forms pure stand.
- or To Portulaca listed sol.

 common on flata at self interest on as south energinal
- 3 71 Feptum repende Br.
- to 72 Bolishavin diffusa Li common on drive scorpes at edge of found, especially in west wish of inlet.

stems ascending of lesly: leave fleely, flowers yellow, 1.5 cm. across, petals emarginate; stamens 30-35 africading rounded tres Three tricoles, 4 m. Delp fruit from ground Geneall. an green fruit on try, rather Tree 3 m. Tall, Turne 3 day thick Lotters seen 20 motall, treally refeto 1-1.7 m. Thick). sterile, their twigs from town on tree, leaves availe, frithe, outs cymes from going beneath tree. plants spreading, almost prostrate to according, fleshy, stems red; bude only, fronts and all eater out by inserts. refts, all seen aterily, no retresseen.

prostrato, forming large met from thick word crown, stems red; Earves white beneath: flowers frink white beneath: proving, closed in often my print in morning, closed in often my fruit in mature.

130 1952 Behavete

3#573 Leaevola frutecem (will shi

7 74 messersehmidial argenty (4.4) Phn
common in open flat
it math and of vilet

takes froming belt another

occasional at toy of block.

Vint 182 - gette found

Vial 193 - flis attracted to

Vial 194 - 9 Enva found on ground in Prison to force &

Viel 135 - Odortmacher Frank on ground &

Puper \$14 - moth carrylet

The characters and on flat

flowers and freist white bush a granging.

prostrate, stails, plants

aug. 9 - Jaboers / slet low gravel bar, not more than a post critics above high tide level. Roch flat I On fract of ber above high tide is a patch of fortulace liter, Harry tremiant. Here is a northery of thousands of souly terns. Hundreds of eggs and thousands of newly bratched Chieles Inot feathers at alloyet, active. Thank dead ones. Very little evident greating Might dark slains in shots indical slight crusts in sulface of sand (Lample 161) of sand comented with quand-Lample les from water when of sandin there is a arrest.

a few rather wick but.

not expecially clean

short vilalichy from Etoper

Pliagning forest in

lample 163 - Profile

Rather loose gitet about

6"deep, very notably

greans-stained-tages

Rample 163-3

Lample 163-2.

Lample 164. Propril, born peat 5" thick. fample 164-1

Layer 2. cemented strong thick sand 3" thick shows fample 164-2

Layer 3. love graff brown sand 4" + Lample 164-3.

Vial 186 - animal from moder nothing Phooning Procest on peat in Browing forest. a minute, except in proposed, very scarce.

134 1952 Biles atol

aug. 9 - Jalikelila Istet

Lample 165 - Protito troin, By deeps, somewhat the 165-1

Lample 166 - Profile

Enger - Pant 5" Will

Lonewhat guers stains

Lample 166-1

Layer 2 - hardpan 7" thick tample to 25 2 lower front

Fager 3 love pale 6"4
Sand and nubble 6"4
Lampleser- 4

Lample 167 - gurno const from eldge of financia franst indender brands where frigate circle Vial 187 - 2- or bearing

and beet to from transis

forest in paliblish

Envire and samuel

gravel for between

Jaliblish and almeni
leaves, other or a wide

gravel gravines.

formple 168 - greening the last,

Lample 169.170, 171 - party

Sample 172 - dried

1950 Bilen atop aug. 7 - Jalitslits Islet 34577 Leptures repens (Foot) a.a. abundant, forming in inequitar belt arbring received side of islat at the of beach." 78 Portulaca almost on ref- with flate on easterlession whitet. in most of minor side of rely ideal GraPortithon you orithing. forming crustorer coral 79 grandition on on Prolithm crust L80 danie to the Te in interstices of Protethon amost 31 Valoria (fragments) (det. Taylor 1955) in interstices of branches spronger soft ceral 82 21 dotes indica N. and E. S. Kepp (dit. Taylor 1955) in interstice of branched springe a soft coral 13 Cauleypa urvilliana Mont. (det. Taylo, 1955) in botes in eval 24 Microdistyn okamurai Setch. in holes, cieries, at income 85 Halimeda on outer side of the ridge, exposed to works.

tupto, mostly stories.

flexly plant, stams
spreading to assending,
flowers yellow, 1-19 cm.
diam, petal, emarginate,
stamens 30 or more

White prints a training on surpress
tett reddish thick felaments
gray, cells terete, trying.

(Mt. Taylor) green, planer conved.
1955 compact tuft

Lample 173 - dry leaves

fresser white trees.

Lample 174 - Profile

east side of Billian

islet in Piranis frest.

Lamer - dupp of leaves.

Layer - duff of leaves and twigs little ally spattered with grano from red footed books nest high about

fage 2 - Peat, dark brown, to black , 6" things BH- 8 texts 3 of them 45 5 %-Them 4.0. Lample 174-2

Layer 3 - hard - pran quite hard, 6" thick, brown with white specks + grains; (25/2) (25/2)

Layen 4 - lovet coars

Lample 175 - 2 bother of water from cavities inspreading loase of Risonia tree in Misonia forest - Bottle, from separate pools may have slightly different set content as bottle 175 a from porting which ar somewhat siverty handberetief had been used to cately actracoda. 175 de from food in sur with a Bacterial seum on the surface. 1752 had surrever astracord, enit (Vial 188)

Vial 189 - I meete etc. grand stores on flower of Prisons forest. Odontornachus mound on ground, small anto on notten buch. Prisoning twing with loss buch. Prisoning twing with loss buch. Prisoning twing with loss buch.

aug. 10 - Bihan Islat

Vial 190 - Hier and battles in Portulaia luter on east end of inlet. This abundant

Vial 191- young gecles

Wind 1924 some some of the first many of side of side

Vial 193 - mappode from under stone, milliped and anything else from root around of Reptures

ang. 11 Bilen Islet

Vial 194 - astracode from
hole in broken off Pinnis
tice - about a agallone
of water with disampoing
leaves and word. We il
drowned is water
Vial 195 - rateintes from
lisonia frest - not
comment.

Viel 196 - gecles, contract from under stone in finding frest speles from listing frest

Vial 197 - Insects and spiders caught in heaverla frate. Fermite. Perpense plats. Fermite. Paper 17 moth caright in Leaverla futercens.

Papers 13, 19, 20 moths caught award tights, Bikes Volet.

Vial 198 - Insect, caught sures repens

Vial 199 - Insects caught in Pisaria fact, cumulinia chisting to bash of lisais other beetle flying.

Vial 200 - Tettigonide caught and Other of Messerinsects caught on Messerschmidia ang. 12. Bishertel.

ang. 11 - Biles Telet Main body of islet covered with solld Pisonia Grest Tick of uneven bright, large trees about 20 on but many of These have fallen, The openings may be word aprilled with of the fracit is of small trees, I some diam, nother close together, not more than 10 m. tell. The frest is about 1/2 clear beneath the next withthundergrowth of root sprouts. Canopy is this because trees are small leafed. a vidge of sandwithink slopes off graduelly Toward the east side along the east ride is a getril about 1/4 the width of the islet when little a mo sand is evident Pert is thick here and renderlain by a strong harden at the edge, and in from

the edge about 20-30 m. into the forest is an exposure of mother peoble to brilder sige. along the entire sast side to 100 m. a. of "esto ping morament (#14). Onthe west side sand bandrifted in covering the freat + hardfran lage with a foot or two foresburden, on top of this athin layer of here real tras been laid down of a relatively love consistency, and where this was been subjected to grano deposition a thin harely has formed or is forming. Where trees have tippy over the roots have often pried chunter of hard from up to the surface - ore place shows an exposure like a ledge several m. long and 0,5 m. thick To weathered hardpan (sample 176). In other places normal growth of noots has forced chunter to or hear to the surface.

In another occurrence of this on old hard - from Levelle was included. 7 bis had undergone some change on the outside. Lample 189.

Balan West - turtly on each of night of Aug. 4. 7, 5, 9, 10, 11 + fely Twitter same ashor 1909. a about 4, any, 10 would 15, ang 11 2 - si very probably

Tros meaning: 49"x 32"

46 x 27" on any, 11 watched me comeaching at stored sile is no Condition yet I wally about 150 inland, hids fout and in large handle start scratching with hird feet quadrally escapating a hote of less than i' diameter. as deep as brind legs could reach using a femiliar beels hand desorping rates with alternate feet, early ting fliffing sand away withouther fort that was brought ing the previous time. Very inefficient digging plinistes, back end prized over hate tel growth downward, toggs are expelled 1-2 months in at a time, dropping into the Erte. This one haid They

in 11 minuter, Then the bolg is very carefully filled and the sand patted and pressed down in a mound over the eggs. gradually this mound is spread out, covered with dead leaver, and a hole nonby dry and the dirt thrown over the mound, is no would brandly ques exactly where the eggs was. Whole process taling does 3 hours+ Eggs seen from three different turtle, newly laid. They varyin size somewhat from twitle to twitle, and venting egg, size of a mally come in the chutch of 97. On aug. 10 and aug. 11, st about & g. m. batches of grung tutle, batchet but and came running through cagny, on the way to the sea. They followed lights. In wight an old tently blundeled through simp ane that was sportly coming out of the water was tragetible by the light and turned back, fatterns en stelle many greatly.

almost all of the turtles carrie astrono on Willian Islet. One set of tracks and a hole was noted on Jalover, afferd on the south that of almeni, but none on Jalibelile. which is nothing and has me love sand.

Billar Islet - Largest islet selliptic in shape with a prolongation to south and one to north houth projection is north projection is a gravel Glat with a low sand ridge along the west side! This low sand ridge become much higher along the west side of the Vitoria forest, to 12-15%, and curve around on the south west side. In places, especially about opposite the southern most grant of the coconnet grove, wave action is cutting into this sand vidge. Here a comple of build shroyn-like soil profiles are exposed the topone about 118' Below the surface of the sand the seems one a port below that The gray brown layers are slightly more confract than the lows dune sand, and the color gradually facter downward to that of the unaltered sand.

Bancally, The soil of the marginal belts of Melserschmily etc. In unalteres send. They of the count grove are so muxed by theringing of the trutter that little of their former character remains. They vary from unalted to flivy - like. Those of the Peronia goest are peat underlain by Wells plus final hardpay. This however is greatly modified by deposition of verying quantities of scand, wither blown or corner ly waves from the sand side on the west and by Scattered boulden and colobbeson and in the surface, which are wither unalted coral or nelf noch free west at churches and stells of hard-pan pushed July from below ly growing lisotia roots or by root of living trees tipped on ly stown. The action of the sand

is two-field - profiles are covered up and peat is misel with sand during its formation and severing much loose than where mosand is added - also its pti is raised substantially. Where there is no sand the pt may be as love as 40 while where sand is abundant, it is 8.0. In many spots there is a thin grafile of, an inch or the of fredt and a bralfinely to an inch of nomewhat consolidated or crumbly insipient hard pan cerested with The usual brown material There is a well-develope hard- pan layer, more or lear weathered, but quite from, some indies thick about 2-3' below the surface. The actual peat has disappeared from this thank - caked enthy nature (Proffile 156) Toward the east side the deposition has been

light in nove atall. Here they is a prest tager of a 6 n 8" thick ouch a learn, well consolidated hand from some rinches thick. Those layers are very insignilarly developed but become more promisent and The expression wider Toward the south. In There section, the Pisonia not platforme are more generally exproved Then tohigand the nivest side, where the sand Las been deposited around the base of the trees, in places covering much of the platform.

156 1952 Bilsen attel

3 almeni slet - This islet is generally more grandly than Bilan The main part is a solid parch of Circuia frest. This is nother this and open. with a from camoun. The maximum size of the trees is about I mil. through and a pew on much as so m. brigh general beight is about is me The outer portion is store wint over \$ 500 m. Tall. In opening are prost ifronte up to i m. toll in some aboundance. The leaves much large Deter on there and an the lower trancher than in the constru On the lagory side the Personia comes to the top of the beach in some places, with wen few comment trees. In places then are open sports, with gravelly soll Boerhavis and a perstrifts of tegetamis, a few Wesselmidation

driverely affering from extremed ongly I wo coronat trees in the opening. On the worth passage the beach is inthe chance gravel few messes sellimidia. some depture, some Brechavia, very little Potulaca. anthy seawardside the beach is sandie. Marrow strip of messerschmide on peripley of lisoning hors - much Cartulaca, Boerhavia and Lefterns, esteringing beach blat out from schmidig for a stately on the middle of the required side. the seaward of this is an extensive flat of with, scarcely about high tide level, with very thin sporadically deposited gravel soil. This than a cover of Intulaca and Septurby the latter mostly dead Tothe motherest the west extends for some

distance as a sand and gravel flat. on the scarcad side this conica sparse to len grazind cover of britiles septurus mith some Bouhavia, along The lagron is a strip of very spane mener slehmedia, with this Boerhaving between the low Pissing clumps of In the main francia forest is generally a layer of plat 5-8" deep, rather loose, with very wellsemented transferan 3-6 or more thick. No eviden of much covering by send, anon Bilan!

between this is letter and palished and palished suited disting search disting soins about typping search bear about the lagorning soins to have four treats wire, which has a four treats

4 a small grave ba in this orderage her 6 Mercerschmidda broule and a few trifts of septimen Jalikelik polet - also covered in main part by Peronia, but there most of the Cisming frest is about 10 m, light the windward and strongly "wind sheared". In the central part there are tree up to 1 m. thick and 15 m. tall but not many wlange except a tanton poteties of wort sprout. tal me parts completely baie. The substration is quite rocky collecto boulders with most place blanketed with a 13-8" laye of peat, bundpen usually underlying along the entire lagory beach, is a cobbbe ridge about -m. trigh, sloping The comewhat to the Literion

along the are very few Messerschmidia here in opening which have a fely mersenhaid and some Brechavia the or especially the from some acionsly suffering foundwight! atheris Pironia corker to the top of the beach. On the southwest ad there is a broad almost completely bas gravel flat, with only a very few almost dear messerschmidig and and busher sprouting from base, a few sudlings a small patel of teliteren and about plants of Portulara. around the southwest, south and southeast and there is almost 'no merserschmidia, only

south and southeast side the beach is grand and there is almost mo mersers him inequally hopes some bothloss and thousand the mostle ast monthly gets wider and this strip gets with the messers and this strip gets with the messers and this strip gets with the messers and their strip gets with the messers and their strip gets.

Decorning fainly wide on the end, where the stole udge brooks ground to the scaward side. Pritilaca and feftures, with little Brechavia here between sparm Masserschmidia. along the entire seaward side it and extending to the north of the relat is an inegular rock flax with little soil. sine Portulaca, a little deptures. grow her on the highest eres of this.

b gravel for well to north.
I Intitlile on rey - very
at all are there members
of party were went

an Bilean Islet, home in

the front here is compiled the files with fine note the services and men on and single produced only single produced only started. Pinning north or started.

Messers amidiant away ald turtle bones partly

about ant on Bilian of the seen at any time of he alment more on the fall of the seen of t

on Bitanin Pinning

bermit crabs are formit crabs are formit crabs are to be formit the formit th

On reef flats in
several Iplaces sures
observed long cracks
straight or durved, often
intersecting, usually
intersecting assaultion
of tollists of changings
formibility of changing
wolume of hely due to
from calcile to a regimite

Frigate birds - present in language tring in the service of flying over the service trees on the flying over the service trees on the fly himmentally over the service trees on the service trees on the service trees one seem in lise onice trees one seem in lise on the seem of the seem of

Red forted borrby

Latge mumbers to

Le sken any time y

Listning trees of flying

about when sixthing

a few nexts the sitting

on them on with almost

Inigh in librain trees.

Proun books - armon flying gland a resting on ground and a strain on the strain of the

from rests. In This find a long of almening to the leading almening to the later than the later

Blue-faced booky = found in small miner especially on scaward Talibelle recting on ground, quetela frew young in all stages of development all thirds being stullon about leaving the young, will spill of Wish and squidy when distulbed as will young, also, when well drown. Very young binds may fleffy and white usually no nesting material at all.

Budled ten - me big

seen flying over muty

forty term - seen combany flying arrowhere the start. Roohens on policies ? 11-1 with thornsolds of abult brids, thousand of verily tratched young grate a few dead, and hundreds of eggs not get hatched, on hode flats to seaward of allmen and political scattered eggs and shells, and do northern estenzion of falibility a small wrothery with many young bird with Living shath met out. Little in no quant on any of these sites.

Crested term - pains
an single birds frais

men seef plats, thatis

harsh grating moin.

Taing terms: very commongrably

bundreds on olimini

flying everywhere eigenth

downing young in tres.

White-capped modely
three mests and she
bird seem in almen's
in lisoning forest. a

small colony of a couple
of dozen nests and a

few birds in lisoning
forest on Jalibelila Very
forest on Jalibelila Very

Common modely - from
bried, sitting of seconds of seconds of sitting of the state.

The sheet on totale.

The sheet of line of the state.

There is forest on patishes.

Red-tailed tropic bidsmall groups of
several to a degree
Sirily of ten will
ever the month and
of Nitran Valet. If it
they would flyaning
thanks mainly beganing

wanted & use this area as nesting site.

White-tailed tropic findsthree of four at a time of ten selen figures and track in this helet making hands protesting was located about a lisonia tree in middle of Prioris free!

Wandering tattler me to three of our individuals
verasionally seen materials
beaches and neef flats.
especially on seaward
sides of reflets.

golden planer - single sindiminally navely small glocking to To commonly seen on all islets, especially anound experts beaches with tettlers expects with tettlers and where with tettlers

mistle-thighed curley single individuals, prior on thee at a time commenty seen around beached and noch freats. quite tame, allowing approach to wathing to Flying away Turnstner- single individuals, pairs a small flocks, up to half a tree occasionally seen on treaches work flats, and need foliate. Ine seen in tirry opening well inside Pistonia forth on biles lold. One sie aligney at sen about Mo mile 2, with Bite at wearm, ang. 1%.

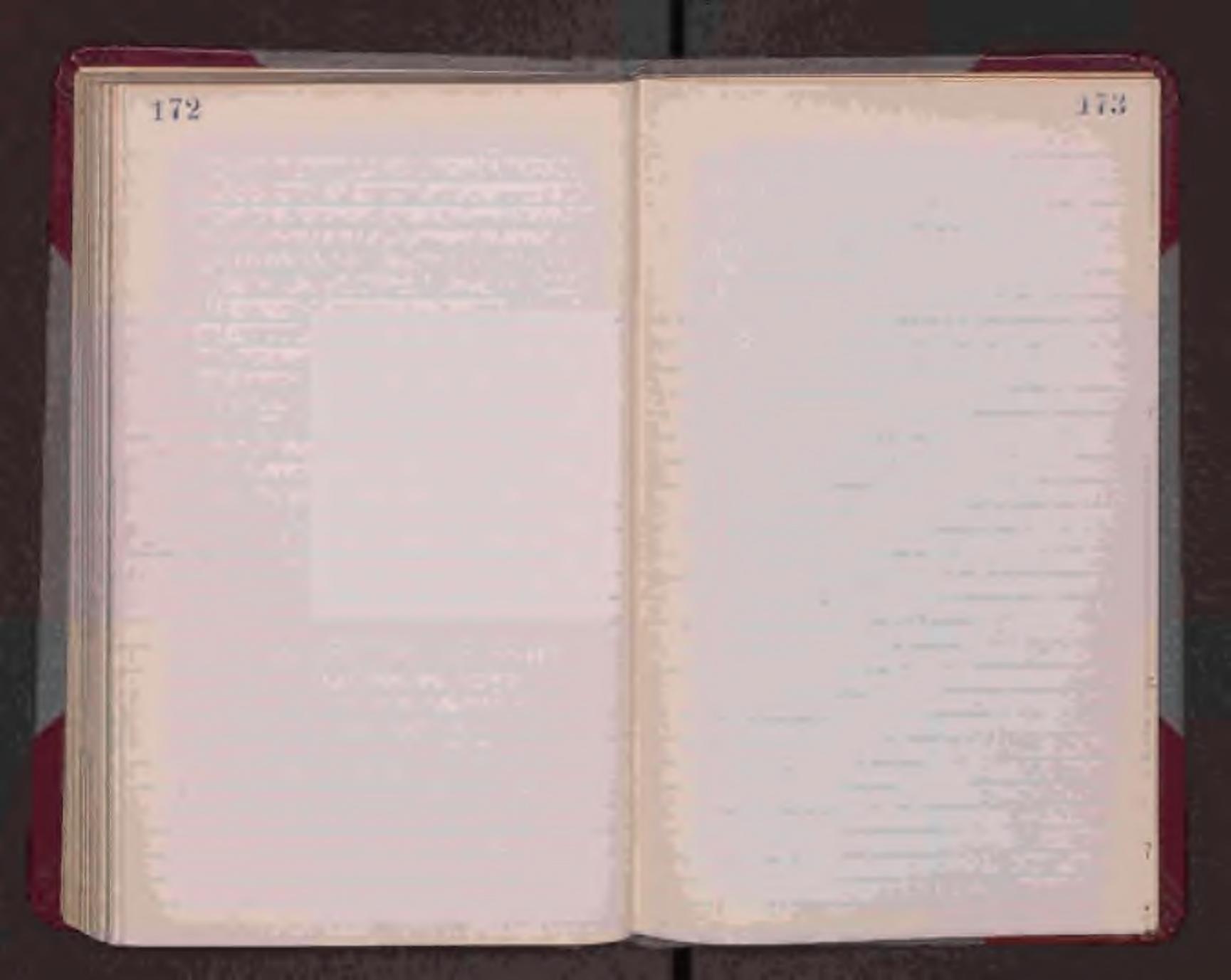
Birds are abundant on British but they are did not completely as

seen on the atter

Mole: figt. Philippes said that exernity wind and that he personally, sand that he personally, sand that he personally, sand several of them.

and are fruit warmen

from ship frecity introduced from ship introduced on Pohale and Bilkan with equipment and supplies taken asters for surreying party



Description of the Jamos

although the extremely interesting "ecological, geological, and pedological relationships of the soils with here name of the Jems Series will be discussed in some detail elsewhere, it seems desirable to publish first a description to establish the wee fithe name, so as to be able to refer to it conveniently, later. the present description will serve, further, to callettentin of soil scientiste to who may not the with the literature of related

in the central Pacific wills be the central Pacific will be the straight of the straight of the straight of the straight of the central 1950 are characterized by a phrophete hard pan which is in turn, underlain by a phrophete turn, underlain by a phrophete turn, underlain by a phrophete

essentially unetters limerand or gravel. These descriptions, engy that of Christopheren. have been rather cased. and Hutchison her summarized what wer known of them up to 1950, in his mongaple on The little ochemistry of Vertebrete Exerction. nowhere, to my knowledge has this group of soils been given a name, not lare it characteristics been something. The name chosen here is from the island of Jerns, in the northern Marshalls, where the writer was first able to in 1951, to study a well developed occurrence of such a soil. This was during a reconneitsance of certain of the northern Marshall Islands carried out ly a party from the U.S. Geological Lurvey, working under auspices of and in The Engineer / Fare Last Command, 45. areny.

176 175 - Marshall In.

During this, survey, sil, assigned to this series -were detected with Taka, Kurajalein, Ujae. Wotho, lejolang, and Biles, Parid Wahre at le to the literature yoursets occurrences, pobably total here, have been found on Palmya, and in the geller of the state Fanning Rose, Bilen and Butaritari, (), all in the central Pacific. andorly. Pierre, a rained atall in the western Julie Ocean. References to Washington greenivile and ngatike, what ignthe central Pacific. suggest that similar material may occur there alon too. The essential feature of the James Series is the existence of an A horizon of a dark brown to black layer of pure organis matter, sprongs or peaty in texture, with the riginal material, leaves and twigs, altered nearly or quite beyond recognition. It vaccus in all but one instance

aug. 16 - notes made from air, flying at about 750;

Kahoolawe - vegetetincover in plateau 570-1070,
localized, large areas
completely brane, lought
red.
cover on worded slopes
varying from 570 to 90%,
apparently depending
somewhat on strepende
of slopes; greatest degree
about alems to be in
30-40° slopes, least in
5°2 and 85°5.

ang 18 - Kahoolawe flight

from tils to Honolulu

are grainy with scattery should

most of it is base red dirt.

Many of the gentle stopes

are spanishly grassy

The ravines have plusses

of red modely water

Lone white sand for the

nothers and continues

of their onthe north side

is red.

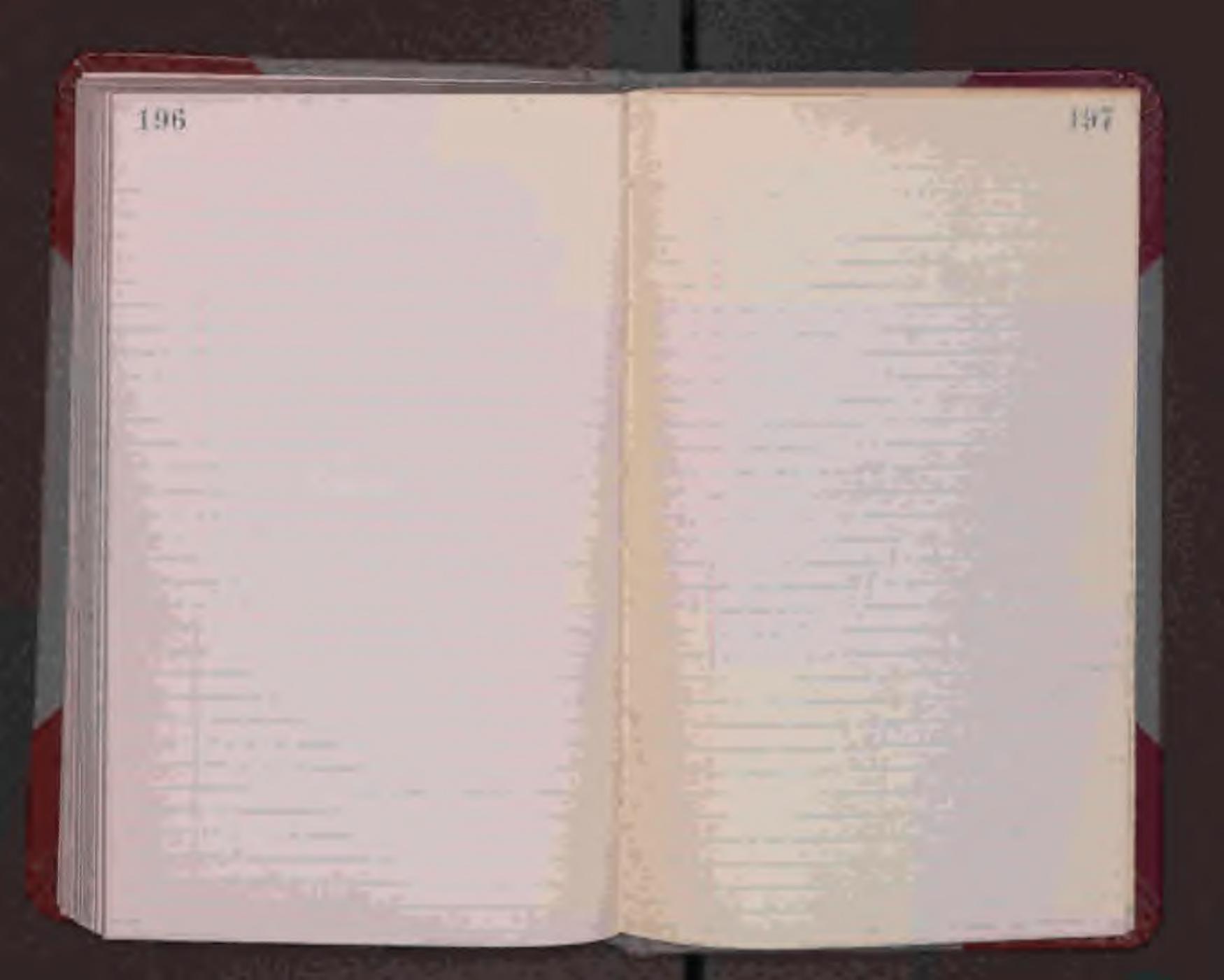
iast marie - several of the most weent lass flows on the south side of Halestrala, when they reach the sea have apparently no vegetation, athers have a thin cover. Lava sloper further up have a sparse over. a few shots trave a good growth, there may be keputras. The state slope of Halaakela is largely of steels lava flows with very sparse over but in about the center of the south court is a earge area of gentles sloke, its top at about 6000'- 6500', the slope grenhaps to", that about becoming much steeper and rougher. The relatively smooth 40° slope is grassy Lanai - There are still, large bare and earth

much less on west and.

Handi 189 188 1952 Howaiia, 20. aug. 16 - Helo sirport flower pertish white. 194600 Britain till of makey You this secul is some Applicage drug 17 - Harrow Matin Dodnes, opening gracy. Toute when end of Mounn It forms madic with Los Truite Road " 4729'-1" trately of acasia broa fred. Spenton sent, & mainly your. shut Im. tell i fruits 154601 Strippfielia Lady purplish many. common in serve fresh low lough, 23 or styphelia - m. tall fruits magenta. common in soul slend in talli fruits 03 Styphelia more common in secule should a, i'm. tall, leaves 04 Vaccinium grale glaver green very common is south shoul less they Dim tall, of Vaccinium blowers ned with green tips. strule m. tall : leave Of Vaccinium very geamous; flowers - purple with green tips. Island about 0.4 m. tall, Or Vaccinium - flowers red with green "you. recording to wild. ochanisal in openings in scrub

aug 17 - Kilenez Crater sighting of July = - 3 In lesward sing of Halemannan fit to sulpher divide order in uncomfortably strong. Zu. Mac Donald it was early stages of the emption alumdant grumes, mostly small broken pieces sociones ils ground on the leavens side much further than the wood. On the vin and for a little distance, the glants of Stylchelia, Jaccinium, and triple staging have been brilled back by the fremer form new growth is stoowing at then bases motoriders did not slow so much damage. The ground by many years backfrom the rim is cracked, tending to slip into the pit there cracks tend to widen, as muchas I come aday Heefs in some of them as dead, of various species

1984 Hawaiien to Harrans 195 194 processing the of amorting the science Harrison



Inder to boy sample, 199

	Y		1	
-	¥		17.7 -	- 11 133
	*130 -	10	163 -	- 10. 133
197	131 -	1/		133
	132	17	166	139
v.		1.7	167	134
	134	1.7	168	135
- 5	135	30	169	135
	134	3/	176	1351
	137	31	17/	135
100			172	135
wigt-	139	3/	173	138
	140	32	174	138
		37	175	139
	143	34	176	147
	194	34	177	177
	145	34	177	149
-1		38		
	144	43		
	147	43		
	149	43		
	150	45_		
	151			
	1520	139		
	153	118		
	154	117		
	135	119		
	156	121		
	157	125		
	158	124		
	159	129		
	160	127		
	161	172		
	16%	132		



